

Notice of Allowability

Application No.

09/936,885

Examiner

David H Kruse

Applicant(s)

MISRA ET AL.

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to to the Amendment filed 20 May 2004.
2. ☒ The allowed claim(s) is/are 2-9, 12, 16-18 and 20-42.
3. ☒ The drawings filed on 17 September 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 02/13/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date SAME.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR § 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Sheree L. Rybak on 2 August 2004.

The application has been amended as follows:

The title of the invention has been replaced with;

-- TRANSGENIC PLANTS EXPRESSING DERMASEPTIN PEPTIDES
PROVIDING BROAD SPECTRUM RESISTANCE TO PATHOGENS --.

In the Abstract, lines 1 and 5, the phrase "and/or temporin" has been deleted.

In The Claims;

Claim 8 (Amended) A transgenic plant having microbial resistance, comprising a nucleic acid molecule encoding a peptide comprising an amino acid sequence selected from the group consisting of[:]

(a) SEQ ID NO: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14;

(b) an amino acid sequence[s] that differs from [an] the amino acid sequence specified in (a) by one or more conservative amino acid substations; and

(c) an amino acid sequence[s] that shares at least 90% sequence identity with [an] the amino acid sequence specified in (a),

wherein the peptide has dermaseptin biological activity.

17 (Amended) The transgenic plant of claim 4, wherein the peptide is encoded by a nucleic acid molecule [comprises] comprising SEQ ID NO: 27.

18. (Amended) The transgenic plant of claim [3] 4, wherein the dermaseptin peptide comprises SEQ ID NO: 28.

At claims 21-32, line 1, "an amino" has been amended to read -- the amino --.

Claim 42 (Amended) The transgenic plant of claim 40, wherein the fungi is a *Fusarium* sp. or a [Phytophthora] *Phytophthora* sp..

2. The amendments to the claims are made for clarity and consistency purposes and are not intended to change the scope of the claimed invention.
3. Applicant's representative approved the changes to the claims as outlined in the attached Interview Summary.
4. The following is an examiner's statement of reasons for allowance: The Misra Declaration filed under 37 C.F.R. § 1.132 on 20 May 2004 has been considered and has been found to be persuasive as directed to the rejection under 35 U.S.C. § 103(a). The Misra Declaration provides evidence that one of ordinary skill in the art would not have had a reasonable expectation of success in expressing a dermaseptin encoding nucleic acid in a plant to provide microbial resistance given the experience in the art at expressing other antimicrobial cationic peptides. The Hancock Declaration filed under 37 C.F.R. § 1.132 on 20 May 2004 has been considered and has been found to be persuasive as to the understanding by one of skill in the art of what is encompassed by the limitation dermaseptin. The breadth of the claims are deemed by the Examiner to be adequately described and enabled because nucleic acid molecules encoding

dermaseptin cationic peptides were well known in the art at the time of the instant invention. One of skill in the art at the time of the invention would interpret the limitation dermaseptin to mean membranolytic peptides from South American arboreal frogs with activity against filamentous fungi as well as bacteria (Wechselberger 1998, *Biochimica et Biophysica Acta* 1388: 279-283, see page 279). One of skill in the art at the time of the invention would have also understood the limitation dermaseptin to encompass a group of antimicrobial peptides of about 27-34 amino acids that have an N-terminal α -helical domain involved in the antimicrobial activity, and that any conserved substitution in the amino acid sequence of a natural dermaseptin would necessarily have to preserve this N-terminal α -helical domain to maintain the biological activity of said natural dermaseptin (Strahilevitz *et al* 1994, *Biochemistry* 33: 10951-10960; and Mor and Nicolas 1994, *The Journal of Biological Chemistry* 269(3): 1934-1939). All references cited are of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 1638

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (571) 272-0799. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Amy Nelson can be reached at (571) 272-0804. The fax telephone number for this Group is (703) 872-9306 Before Final or (703) 872-9307 After Final.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (571) 272-0547.



DAVID H. KRUSE, PH.D.
PATENT EXAMINER

AM 1638

David H. Kruse, Ph.D.
3 August 2004

6. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.